

seemed to be up high, and its path thru the town was along a creek where there were generally no large trees. The damage to property amounted to about \$1,700. No lives were lost and no one was injured.

Unsettled pressure conditions prevailed in the South on the morning of May 30, there being a storm of considerable energy off the Carolina coast and a shallow depression in Louisiana. Over western Florida the weather during the day was generally partly cloudy, with southwest to west winds. Practically no rain fell in that section, and the observer at Blountstown reported only a light sprinkle. Rain set in over the western counties during the night of the 30th, and the amounts measured on the following day in several instances exceeded an inch.—*T. F. D.*

A HURRICANE IN THE WEST INDIES IN MARCH, 1908.

By JOHN T. QUIN. Dated St. Croix, Danish West Indies, May 20, 1908.

In the first week of March, 1908, we of the islands in and around the northeastern corner of the Caribbean Sea were surprised to experience weather of so boisterous a character that it reminded us of what sometimes takes place in the regular hurricane season, weather whose behavior suggested the passage of a cyclone, but a cyclone following a quite unusual track.

Here, in St. Croix, there was a marked change in conditions on the 4th of the month, when the wind, as shown in Table 1, leaving the east-southeast direction, in which it had been blowing, went round to southwest. During the night it went thru west to west-northwest, from which point it was blowing hard early in the morning of the 5th. Later in the day it shifted to northwest, and during the following two days it blew a half-gale from north or thereabouts. On the afternoon of the 7th it was shifting toward northeast, to which point it had gone round before dawn on the 8th, during which day it shifted still farther till it arrived at east-southeast again. Hence it had gone thru all the points of the compass during the five days. This remarkable journey, along with the rather low barometer from the 3d of the month, appeared to show that a cyclone center was passing north of these islands from about west-northwest to east-southeast. But this seemed so unlikely that it was easier at first to suppose that there must have been some other cause for these changes. It was only on the night of the 7th, when the barometer began to fall and the wind continued to shift more to the east, and on the morning of the 8th, when the barometer fell still lower and the wind went still further round, that it began to appear certain that a cyclone had at all events been now developed and that it was entering the Caribbean Sea.

At St. Thomas the same wind changes were observed as at St. Croix, and the barometer at its lowest, which was at 3 a. m. on the 8th, stood nearly at the same height, namely, 29.80.

As information from the other neighboring islands began to come in after the storm had past, its character and movements became more and more clear, till it seemed plain that a cyclone of considerable force, originating to the northward, had moved first toward east-southeast and then southeast, then had curved to the southwest and entered the Caribbean Sea. By and by it became possible to say just where the cyclone center had past thru the Caribbean chain of islands, namely, between St. Christopher on the southeast and St. Eustatius on the northwest. This is manifest from the fact that at St. Christopher and at Nevis all the small craft lying, as is the case nearly everywhere in the Caribbean chain, on the westward or lee side of the islands were driven ashore, while at St. Eustatius the vessels (also on the lee side) were driven out to sea. A schooner navigated by the mate and a couple of hands arrived at St. Thomas and reported having been driven off from St. Eustatius by the storm, the captain and the rest of the crew having been left ashore, as there was no possibility of communicating. On the 23d of March a

telegram was received here in St. Croix from Porto Rico announcing that "a Curaçao sloop named the *Sea Hawk* was picked up off Arroyo on Friday (the 20th), abandoned and stripped of mast and sails." Subsequently it turned out that the sloop had broken away from her anchorage at St. Eustatius during the storm, all hands being on shore at the time. On the other hand, the St. Christopher Advertiser of the 10th contained a list of about twenty-four sloops and boats that had been driven ashore in the early morning of the 8th and been either entirely destroyed or badly damaged. The storm was at its height there at 2 a. m., when the barometer at Basseterre, St. Kitts, stood at 29.28. At Antigua, farther away from the center to the eastward, it stood at 29.62 at the same hour. Here in St. Croix, as noted above, the lowest barometer was at 4 a. m., when it stood at 29.83 and at St. Thomas an hour earlier at 29.80. No particulars in this regard have reached us from the other islands.

TABLE 1.—Weather notes, February 29 to March 11, 1908, at Christiansted, St. Croix, W. I.

Date.	Barometer, reduced.*	Wind and weather.	Rain-fall.	Sea.
1908.	<i>Inches.</i>		<i>Inches.</i>	
Feb. 29	30.05	Fine, with light showers; high clouds in early morning from W. by S.	0.33	
Mar. 1	30.00	Moderate breeze from ESE; low clouds from ESE; high clouds very abundant from W. by S.; fast.	.05	
2	29.96	Cloudy; low clouds from ESE.	.00	
3	29.94	Cloudy most of day; lightning in evening; low clouds from SE.	.00	
4	29.98	Fine; heavy shower between 1 and 2 in the morning; light breeze SW.	.12	Moderate swell on reef.†
5	29.95	6:30 a. m., cloudy; clear by 8 a. m.; strong wind from WNW; later from NW.	.14	Sea rather heavy.
6	29.99	Strong N. wind all day; low clouds in blue sky.	.00	Rough sea.
7	29.94	Squally, with light showers; wind strong from N., increasing and shifting toward NE.	.12	Sea increasing; magnificent breakers on reef in afternoon.
8	29.83	Heavy weather all night, wind shifting thru NE. to ENE. by 8 a. m., to E. by 11 a. m., to SE. by E. by 4 p. m., still gusty, but greatly abated.	.19	Grand sea on reef in forenoon; greatly abated by 4 p. m.
8	30.04			
9	30.09	Cloudy in early morning, cleared by 8 a. m.; fine day; light breeze from E.	.27	Sea subsided.
10	30.10	Fine; moderate breeze from ENE; light showers occasionally.	.12	Sea subsided.
11	30.11	Fine; fresh breeze from E. or E. by N.; occasional squalls, with light showers.	.12	Moderate swell on reef.

* At 10 p. m., except where otherwise stated.

† The reef referred to is the "Long Reef," at Christiansted. It faces northeast.

‡ At 4 a. m.

In regard to the rainfall from this disturbance, we learn from the reports of Mr. Shepherd, Agricultural Superintendent at St. Kitts, to the Imperial Department of Agriculture, Barbados, that in the north of St. Kitts the fall was 8 inches, at Basseterre, in the southeast of St. Kitts, it was 4 inches, and in Nevis, still farther to the southeast, it was 3 inches. This gradation is interesting as confirming the view that the cyclone center past thru the channel between St. Kitts and St. Eustatius. Here in St. Croix, at a distance of about 120 English miles from the center, the rainfall did not amount to 1 inch.

Before reaching the above-named channel the center had past near to St. Bartholomew, where some damage was done to buildings, among others to the Anglican Church. In St. Martins, lying northwest of St. Bartholomew, considerable damage was done to the tents of the peasants and to the cotton crop. The news from that island is also interesting as containing the information that the wind went round thru east, as in the Danish Islands, showing that St. Martins was on the same side (the northwest side) of the storm.

Of the cyclonic nature of the storm there can be no doubt; but whether it had the usual calm center or not there is no evidence to show.

In regard to the track of the storm center shortly before it came among the West Indian Islands we have two clues. The

Leyland Line steamer *Barbadian* reached St. Thomas from Liverpool on the morning of Saturday the 7th and reported having encountered a southwest gale on Thursday the 5th, changing to a northwest gale on Friday the 6th. In the absence of more precise information we can only deduce from this that the storm center was north of the ship's position at some time in the course of Thursday night, when she would be between 200 and 300 miles from St. Thomas. Again, the three-masted schooner, *Hattie C. Luce*, which arrived at St. Thomas with a cargo of ice on the 10th, reported having met with a hurricane in the neighborhood of Sombrero, with the consequent loss of some of her sails.

It has not been possible to find much information bearing on the earlier course of the cyclone, that is to say its track before it moved, or while it was moving, say from west-northwest to east-southeast; it may, however, be noted that the *S. S. Parima*, of the Quebec Line, arriving at St. Thomas on the morning of the 7th, reported bad weather "all the way out," and that the *S. S. Praesident*, of the Hamburg-American Line, which left St. Thomas for San Juan, Santo Domingo City, etc., on the 3d of the month, fell in with a gale as she was passing thru the Mona Passage on the night of the 4th; but we have no details from either of those vessels.

From the above it would seem that the cyclone in question followed a track opposite in every particular to the track usually followed by cyclones originating within the Tropics in the hurricane season. For its curve, instead of being convex toward the west, was convex toward the east, and was made by a movement southward instead of northward; its track before making the curve was apparently from about west-northwest to east-southeast, instead of being from east-southeast to west-northwest; and its track after passing the curve was from northeast to southwest, instead of being from southwest to northeast. It seems that the storm must have died out in the eastern part of the Caribbean, for nothing has been heard of it from any of the large islands to leeward.

The movements of the high clouds, as seen from St. Croix, failed to throw any light on the movements of the vortex of the storm. High clouds were seen here on the 28th of February, moving from west by north, and again on the 29th and on March 1, on both of which days they were moving from west by south. After the 1st no high clouds were seen, altho there was a good deal of blue sky the whole time, and the writer frequently lookt for them. There is presumably a good deal to be learned about the movements of the higher air during the passage of a cyclone, and even a negative result, as in the present case, may have some value among the observations necessary to throw light on this interesting branch of inquiry.

TORNADO AT PEKIN, ILL., MARCH 27, 1908.

By DEWEY A. SEELEY. Dated Peoria, Ill., April 6, 1908.

A severe local storm occurred at Pekin, Ill., March 27, 1908. A lengthy newspaper account may be found in the *Peoria Journal* of March 28.

I visited the scene of this destruction a few days after the storm occurred and am of the opinion that the storm was tornadic in character, altho of small proportions.

The storm traveled in a northeasterly direction, starting in the southwestern portion of the city at the outskirts, thereby traversing the southeastern section.

The débris was scattered in all directions, but was mostly carried northeastward along the storm's path. The storm occurred about 8:30 p. m. As far as I could learn no one observed a funnel-shaped cloud or other extraordinary phenomena. The rain accompanying the storm was reported to be very heavy. No hail was reported to have fallen. Several witnesses spoke of the unusual and peculiar attendant noises. There were several indications of the presence of a whirl, the débris being distributed in all directions. A whirling motion

was also indicated by the fact that several barns and outbuildings were lifted from their foundations and dropt some distance away, bottom side up. The roof of one store building was carried away and the front windowpanes of the store blown outward.

The trees and other débris lay in an easterly direction in the center line of greatest destruction. On the right side the direction was mostly easterly, and on the left, more to the north. The path, as far as it was traced, was probably about one and one-half miles in length, and the width at the point of greatest destruction did not exceed 150 feet. The storm seemed to jump, from time to time, over distances varying from one to three blocks, leaving the property in these places unmolested, then to proceed with its destructive effect for one or two hundred feet. No persons were killed by the storm.

WINDSTORM AT PEORIA, ILL., MAY 5, 1908.

By DEWEY A. SEELEY, Observer. Dated Peoria, Ill., May 7, 1908.

A windstorm occurred in this city about 3 a. m., May 5, 1908. An account is published in the *Peoria Star* of that day.

I am of the opinion that the storm was somewhat tornadic in character. However, the devastation in but one locality points to this conclusion. I have searched in all directions for evidences of destruction resulting from circular wind movement without finding any other.

The wind was high easterly during the early morning. It swept across Peoria Lake, which lies along the northeastern border of the city. This is simply a widening of the Illinois River, probably a half-mile across. The waves were reported to be six or eight feet high on the west side of this lake, and considerable damage resulted to small boat houses and craft along the shore.

The store buildings which were damaged were 1,000 feet away from the shore, on a bluff probably 50 feet high, and were four to eight-story buildings.

May it not be possible that the circular motion evidenced by the wind when it reached these buildings was due to an eddy caused by the wind rushing between the buildings?

A window on the southwest side of the Schipper and Block Building was blown outward, every particle of glass falling outside of the building. A tile was lifted from the edge of the roof, raised several feet in the air, and dasht into a cupola. The gravel over a small section of the roof near the point from which the tile was taken was entirely cleaned away, while a few feet distant an unprotected lumber pile containing small pieces of timber, was unmolested. Across the street another small window was demolished, the glass in this case also all falling outside the building. It was carried toward the northeast, that is, in just the opposite direction from the glass on the former building.

The barograph trace at the Weather Bureau station, which is located about one and one-half miles northwest of the damaged stores, exhibited a sudden fall in pressure of about 0.17 of an inch, and an equally abrupt rise at the time the damage was done. The wind direction pens recorded every direction during the time, changing rapidly from one point to another. No thunder and lightning accompanied the disturbance, and no rain fell at the time. The highest wind velocity for a five-minute period recorded at the station was 36 miles an hour, and no single mile was registered at a much higher rate.

ICE CONDITIONS ON THE GREAT LAKES, WINTER OF 1907-8.¹

By NORMAN B. CONGER, Inspector and Marine Agent. Dated Detroit, Mich., May 16, 1908.

The amount of ice on the Great Lakes during the winter of

¹ Similar details as to ice in the Great Lakes will be found for the winters of 1899-1907 in the Lake Charts for those years, as compiled by Mr. N. B. Conger and Prof. A. J. Henry and published semiannually by the Weather Bureau.